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U.S. Patent Application No. 10/660,110
Amendment dated April 1, 2008
In Response to Office Action dated January 29, 2008

REMARKS

Continued examination and favorable reconsideration are respectfully requested.

Applicants wish to thank the Examiner for withdrawal of the objection to claim 23, for withdrawal of the rejections of claims 20-44 under 35 U.S.C. § 112, second paragraph, and claim 20 under 35 U.S.C. § 103(a), and for acceptance of the drawings filed on September 11, 2003.

INTRODUCTION

Claims 20, 23-34, and 36-55 remain pending. Claims 20, 23-30, 33, 36-42, and 45-53 have been amended. Support for the amended claims can be found throughout the originally filed specification, for example, in paragraphs [0058]-[0063], and in FIGS. 4A-4C, of the application as it was originally filed. No new matter has been added.

Rejection of Claims 20, 23-32, and 47-55 under 35 U.S.C. §112, Second Paragraph

At page 3 of the Office Action, claims 20, 23-32, and 47-55 are objected to under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. For the reasons set forth below, Applicants respectfully traverse this rejection.

The Office Action asserts that there is insufficient antecedent basis for the limitation "the first and second parameters" recited in claims 20 and 45. The limitation "the first and second parameters" has been removed from claims 20 and 45, thereby rendering this rejection moot. Reconsideration and withdrawal of the rejection are respectfully requested.

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Rejection of Claims 20, 23, and 45-46 under 35 U.S.C. §102(b)

At page 4 of the Office Action, claims 20, 23, and 45-46 are rejected under 35 U.S.C. §102(b) as being allegedly anticipated by Kobayashi et al. (Journal of Chromatography, 1989, volume 480, pages 179-184). For the reasons set forth herein, the rejection is respectfully traversed.

Claim 20 of the present application recites a method for improving the measurement of a plurality of types of specific particles of a sample wherein a photodetector is configured to a first configuration having a dynamic range that has a first upper limit. At this first configuration, a measurement of the plurality of types of specific particles occurs, and the photodetector yields an output signal that represents the abundance of a first type of specific particle. If the signal representing the abundance of the first type of particles is too strong for the first configuration, the signal may fall outside of the first dynamic range, i.e., above the upper limit of the first dynamic range. The photodetector is then reconfigured to a second dynamic range. The second dynamic range has an upper limit that is greater than the first upper limit. This allows the photodetector to detect signals that may have been too intense to be measured at the first configuration, that is, to detect signals that are too strong to fall within the first dynamic range. The method also determines that an output signal is greater than the first upper limit of the first configuration, and scales the output signal based on the combined measurements taken at the first configuration and at the second configuration.

Kobayashi et al. fails to teach or suggest configuring a photodetector to two separate settings that allow for signals that would not be measurable at a first setting, to be measured at a second setting. Kobayashi also fails to teach or suggest the use of a scaling feature, whereby an output signal that is not measured in a first configuration can be measured as a scaled

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representation using a combination of first and second measurements taken at two different configurations. In view of the amendments to claim 20, and for at least the reasons set forth above, the rejection of claim 20 as allegedly being anticipated by Kobayashi et al., is deemed to be overcome.

Similar amendments have also been made to independent claim 45, except that claim 45 recites a method that provides a scaled representation of an output signal that could not be measured at a first configuration because the signal was below a first lower limit of the first dynamic range at the first configuration. The distinction over Kobayashi et al., mentioned above with respect to claim 20, also apply in distinguishing claim 45. Reconsideration and withdrawal of the rejection of claim 45 are respectfully requested.

Claims 23 and 46 depend from claims 20 and 45, respectively. In view of this, the rejection of claims 23 and 46 is deemed to be overcome for at least the same reasons that the rejection of claims 20 and 45 is deemed overcome. Reconsideration and withdrawal of the rejection of claims 23 and 46 are respectfully requested.

Rejection of Claims 24-34, 36-44, and 47-55 under 35 U.S.C. §103(a)

Rejection # 1

At page 8 of the Office Action, claims 24, 33-34, 36, and 47 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Kobayashi et al., and further in view of Tomlinson et al. (Electrophoresis, 1994, volume 15, pages 62-71). For the reasons set forth herein, this rejection is respectfully traversed.

At page 9, the Examiner admits, "Kobayashi et al. does not teach extending the dynamic range of the detector." Applicants further point out that Kobayashi et al. fails to teach separate

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and distinct configurations of a photodetector, where the first configuration has a first dynamic range, and the second configuration has a second dynamic range with a limit that differs from the corresponding limit of the first dynamic range. Furthermore, Kobayashi et al. fails to disclose or suggest determining that a second output signal falls inside of a second dynamic range but falls outside of a first dynamic range, let alone, scaling the measurement of the second output signal taken at the first configuration so that a scaled representation can be generated.

The Examiner contends that it would be obvious to one skilled in the art to modify the detection system of Kobayashi et al. with that of Tomlinson et al. to create a system that would provide the method recited in claims 24, 33-34, 36, and 47. Even if this combination were proper, it is respectfully submitted that the claimed method would nonetheless still not be achieved or rendered obvious. Tomlinson et al. fails to cure the many deficiencies of Kobayashi et al. when attempting to achieve the claimed method. There is nothing in Tomlinson et al. that would enable one skilled in the art to perform two separate configurations for a photodetector, where each configuration has two different dynamic ranges. The Examiner points to Figures 3 and 4 of Tomlinson as an example of extending the dynamic range of the photodetector. Figure 3, however, is an electropherogram of the compound HAL in combination with ten synthetic standards separated by free solution. Figure 4, on the other hand, is an electropherogram of an in-vitro guinea pig hepatic microsomal incubation of the compound HAL. The two electropherograms are not taken of the same sample. This differs from the claimed invention wherein a plurality of types of particles are measured, and the types of particles all come from the same sample. In Tomlinson et al., measurements are taken from separate samples.

Moreover, neither Kobayashi et al. nor Tomlinson et al. discloses or suggests combining first and second measurements taken from two respective, different, configurations having

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respectively different dynamic ranges, and determining a scaled representation of a signal at the first configuration wherein the first configuration cannot, by itself, measure the signal.

Accordingly, for the many reasons set forth above, and in view of the amendments to the claims, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection # 2

At page 10 of the Office Action, claims 28-29, 31-32, 40-41, 43-44, 51-52, and 54-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al in view of Tomlinson et al., and further in view of Photomultiplier Tubes. For the reasons set forth herein, this rejection is respectfully traversed.

Even if the combination of Kobayashi et al., Tomlinson et al., and Photomultiplier Tubes were proper, Photomultiplier Tubes fails to overcome the deficiencies left by Kobayashi et al. and Tomlinson et al. when attempting to achieve the claimed method. Photomultiplier Tubes describes the use of photomultiplier tubes, and does not teach or suggest improving, or extending, the dynamic range of a photodetector. Moreover, claims 28-29 and 31-32 depend from claim 20, and claims 51-52 and 54-55 depend from claim 45, which should be allowed for the same reasons set forth above. Accordingly, this rejection is overcome. Reconsideration and withdrawal are respectfully requested.

Rejection # 3

At page 12 of the Office Action, claims 30, 42, and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al., in view of Tomlinson et al. in view of Photomultiplier Tubes, and further in view of Priebe. For the reasons set forth herein, the

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rejection is respectfully traversed.

Even if the combination of Kobayashi et al., Tomlinson et al., Photomultiplier Tubes, and Priebe were proper, Priebe fails to overcome the deficiencies left by Kobayashi et al., Tomlinson et al., and Photomultiplier Tubes. Priebe relates to a two method approach of measuring signal attenuation, however, Priebe fails to teach or suggest the use of a photodetector, and methods for improving or extending the dynamic range of the photodetector, let alone generating multiple output signals at each of two different photodetector configurations. As a result, this rejection is deemed overcome.

Moreover, claims 30, 42, and 53 depend from claims 20, 33, and 45, respectively. Claims 20, 33, and 45 are deemed allowable for the reasons set forth above. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection # 4

At page 13 of the Office Action, claims 25-26, 37-38, and 48-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al., in view of Tomlinson et al., and further in view of Tacklind et al. For the reasons set forth herein, the rejection is respectfully traversed.

Even if the combination of Kobayashi et al., Tomlinson et al., and Tacklind et al. were proper, Tacklind et al. fails to overcome the deficiencies left by Kobayashi et al. and Tomlinson et al. Tacklind et al. relates to a servo-controlled automatic leveler for determining if construction beams are level, however, Tacklind et al. fails to teach or suggest the use of a photodetector, and methods for improving or extending the dynamic range of a photodetector, let alone by measuring for multiple output signals at each of two different configurations.

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Moreover, claims 25-26 depend from claim 20, claims 37-38 depend from claim 33, and claims 48-49 depend from claim 45. Claims 20, 33, and 45 should be allowed for the reasons set forth above. Claims 25-26, 37-38, and 48-49 should be allowed for at least the same reasons. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection # 5

At page 15 of the Office Action, claims 27, 39, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al., in view of Tomlinson et al., in view of Tacklind et al., and further in view of Pierre et al. For the reasons set forth herein, the rejection is respectfully traversed.

Even if the combination of Kobayashi et al., Tomlinson et al., Tacklind et al., and Pierre et al. were proper, Pierre et al. fails to overcome the deficiencies left by Kobayashi et al., Tomlinson et al., and Tacklind et al. Pierre et al. relates to calibration procedures for quadrature receivers, however, Pierre et al. fails to teach or suggest the use of a photodetector, and methods for improving or extending the dynamic range of the photodetector, let alone by measuring for multiple output signals at each of two different configurations.

Moreover, claims 27, 39, and 50 depend from claims 20, 33, and 45, respectively, and should be allowed for at least the same reasons that these independent claims are allowed. Reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

In view of the foregoing remarks, Applicants respectfully request favorable reconsideration of the present application and a timely allowance of the pending claims.

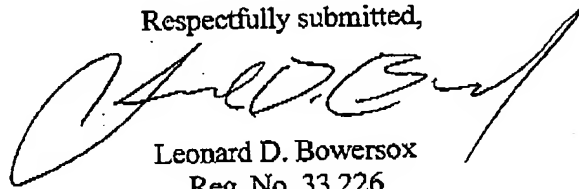
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Should the Examiner deem that any further action by Applicants or Applicant's undersigned representative is desirable and/or necessary, the Examiner is invited to telephone the undersigned at the number set forth below.

If there are any other fees due in connection with the filing of this response, please charge the fees to deposit Account No. 50-0925. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such extension is requested and should also be charged to said Deposit Account.

Respectfully submitted,



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